Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Petitions for Waiver to	)	
Deploy 700 MHz Public Safety	)	
Broadband Networks of	)	
	)	
City of Boston; City and County of San	)	
Francisco, City of Oakland and City of San	)	PS Docket No. 06-229
Jose; State of New Jersey; City of New York;	)	DA 09-1819
District of Columbia; State of New York; City	)	
of Chesapeake, Virginia; City of San	)	
Antonio, Bexar County and Comal County,	)	
Texas; State of New Mexico; State of North	)	
Dakota; City of Charlotte, North Carolina;	)	
Counties of Blackhawk, Buchanan, Dubuque,	)	
Grundy, Johnson, Marshall and Scott, and the	)	
City of Cedar Rapids, Iowa	)	

COMMENTS OF NORTHROP GRUMMAN INFORMATION TECHNOLOGY, INC.

Northrop Grumman Information Technology, Inc. ("Northrop Grumman") hereby submits its Comments in response to the *Third Further Notice of Proposed Rulemaking* in the above-captioned proceeding,[1] wherein the Commission seeks comment on thirteen petitions for waiver filed by state and local public safety agencies seeking authority to deploy networks in the Public Safety broadband spectrum in the Upper 700 MHz Band. In seeking comment on the petitions, the Commission is pursuing a commendable and important path to bring advanced services to state and local law enforcement, fire, emergency medical and other public safety services. The petitions demonstrate with clarity the means by which a nationwide interoperable

[1] *See Public Notice*, "Public Safety and Homeland Security Bureau Seeks Comment on Petitions for Waiver to Deploy 700 MHz Public Safety Broadband Networks," PS Docket No. 06-229, DA 09-1819 (Aug. 14, 2009) ("*Public Notice*").

network responsive to local requirements can emerge and not be stymied by delay and uncertainty. Northrop Grumman urges expeditious approval of the waiver petitions.

I. INTRODUCTION

Northrop Grumman Information Technology, Inc., a wholly-owned subsidiary of Northrop Grumman Corporation, is a leading provider of information technology, systems engineering and systems integration, serving federal civilian and state and local agencies, the Department of Defense, national intelligence, and commercial customers. Northrop Grumman provides unbiased engineering and vendor-neutral integration embracing best-of-class technologies and products which deploy and manage a wide range of networks.

Northrop Grumman is a leader in public safety communications systems and one of the world's largest suppliers of 9-1-1 First Responder Computer-Aided Dispatch systems, as well as a major presence in domestic security initiatives as the number one provider of security solutions to the federal government. Northrop Grumman has deployed next-generation secure broadband wireless networks and interoperable voice communications solutions for defense, intelligence, and public safety agencies.[2] Northrop Grumman's extensive experience as a systems integrator encompasses designing, building, and maintaining the systems public safety agencies will deploy in the Upper 700 MHz band.

[2] Northrop Grumman has deployed the first large-scale secure mission-critical broadband wireless system for the public sector, covering the entire City of New York and serving a wide range of different public safety and government operations and entities. This municipal network, NYCWiN, operates on 10 MHz of leased spectrum in the 2.5GHz band. NYCWiN provides first responders high-speed data access to support large file transfers, including fingerprints, mug shots, City maps, automatic vehicle location, and full-motion streaming video. A fully-interoperable, IP-based network, NYCWiN enhances public safety response by linking emergency personnel, on-scene, wirelessly with incident managers at remote sites through real-time data and video feeds. It is deployed consistent with mission-critical public safety standards and provides a resilient network capable of delivering real-time information to the field.

Northrop Grumman has participated in the Upper 700 MHz Band proceedings since their commencement. Throughout it has urged the Commission to pursue a structure that offers state and local agencies appropriate flexibility in a process not burdened by delay. In its comments to the Commission in the rule makings on these matters, Northrop Grumman has noted that:

> [L]ocal and regional public safety mission-critical broadband wireless networks are already being constructed and operated, with an increasing number to come, notwithstanding the barriers the Commission has in place on local use of the 700 MHz Public Safety broadband spectrum. These networks are potentially harmonious with the proposed public/public national shared network. And if the public/private partnership does not come to fruition for whatever reason, the continued organic growth of such local networks will increasingly meet public safety's needs, with interoperability achievable inherently in such IP-based networks.[3]

Northrop Grumman has continually advocated for a mechanism allowing local or regional public service entities to construct broadband networks on the Public Safety broadband spectrum as long as the systems satisfy national interoperability standards,[4] and there has been significant support for this from a wide range of other commenters in those proceedings.[5]

II. THE 700 MHZ WAIVER PETITIONS

In the *Public Notice* the Commission requested comment addressing thirteen petitions for waiver seeking authority to deploy public safety broadband systems on a local or regional basis in the 10 MHz of 700 MHz Public Safety broadband spectrum (763-768/793-798 MHz) currently

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[3] *Comments of Northern Grumman Information Technology, Inc.*, WT Docket No. 06-150 *et al.* (filed November 3, 2008) ("*Northrop Grumman 3rd FNPRM Comments*") at 2. *See also Comments of Northern Grumman Information Technology, Inc.*, WT Docket No. 06-150 *et al.* (filed June 20, 2008) ("*Northrop Grumman 2nd FNPRM Comments*") at 3, 10-11; *Reply Comments of Northern Grumman Information Technology, Inc.*, WT Docket No. 06-150 *et al.* (filed July 7, 2008) ("*Northrop Grumman 2nd FNPRM Reply Comments*") at 2; *Comments of Northern Grumman Information Technology, Inc.*, PS Docket No. 06-229 and WT 96-86 (filed Feb. 26, 2007) ("*Northrop Grumman 9th NPRM Comments*") at 8-9.

[4] *See, e.g., Northrop Grumman 3rd FNPRM Comments* at 2, 6-8; *Northrop Grumman 2nd FNPRM Reply Comments* at 2-4; *Comments of Northern Grumman Information Technology, Inc.*, WT Docket No. 06-150 *et al.* [in response to the first *Further Notice of Proposed Rulemaking*] (filed May 23, 2007) at 6.

[5] *Northrop Grumman 2nd FNPRM Reply Comments* at 3-4.

licensed to the Public Safety Broadband Licensee ("PSBL").[6] The petitions seek a waiver of the Commission rules so that each can commence deployment of a mobile broadband network able to meet the advanced service requirements of public safety agencies in their area. Each petition is explicit in the need for an advanced broadband network, and a commitment to deploy and manage it in fidelity to a nationwide network delivering interoperability and connectivity.

Under the Commission's current rules, the winning auction bidder of the commercial D Block, 10 MHz of spectrum in the Upper 700 MHz band, was to enter into a public/private partnership with the PSBL, which holds the adjoining Public Safety broadband spectrum. No winning bidder emerged from the D Block auction when it closed in March, 2008. In its *Third Further Notice of Proposed Rulemaking* regarding the 700 MHz D Block, the Commission responded to the failed auction with a number of proposed changes to the public/private partnership model, including positing that the D Block auction be conducted on a regional basis in an attempt to attract capable bidders to another auction.[7]

The Commission's current reexamination is critical to bringing advanced services to the public sector in a timely manner. Regardless of where the Commission's policy-making effort is leading, the myriad details and issues inextricably tied to the pursuit of a nationwide public/private partnership have resulted in lengthy Commission processes. Such processes will continue for some time if the public/private partnership continues to be the Commission's focus. Meanwhile, as evident with the instant petitions for waiver and in the record of the related rule making proceedings, [8] public safety agencies are increasingly seeking to construct and operate

[6] *Public Notice* at 1. Northrop Grumman's comments herein pertain to the twelve petitions referenced in the caption above. Northrop Grumman takes no position with regard to the waiver application filed by Flow Mobil.
[7] *Third Further Notice of Proposed Rulemaking, Service Rules for the 698-746, 747-762 and 777-792 MHz Bands,* WT Docket No. 06-150 *et al.*, 23 FCC Rcd 14301 (2008) ("*Third Further Notice*").
[8] *See, e.g., Northrop Grumman 2nd FNPRM Comments* at 10; *Northrop Grumman 2nd FNPRM Reply Comments* at 2; *Northrop Grumman 9th NPRM Comments* at 8-9.

advanced mission-critical broadband wireless systems, with the wherewithal to do it. The Commission should recognize that since the commencement of these 700 MHz proceedings, the market predictably has moved to bring affordable and robust broadband wireless to state and local public safety.[9]

The market is already promoting efficiencies that public safety agencies can leverage to reduce costs. Shared infrastructure, the most expensive element of any deployment, is presenting cost efficiencies to accelerate the public safety sector's path to advanced services.[10] Public safety broadband initiatives can supplement high site Land Mobile Radio infrastructures with the cellularized architecture associated with commercial broadband providers. A commonality of interests will present public safety with arrangements that embrace network attributes of security, redundancy and reliability at significant cost efficiencies and resource savings.[11] In contrast, regulatory constructs, whether through rate or access regulation, rarely move parties with similar but unique requirements to achieve such efficiencies.

. These market forces and opportunities are reflected in the waiver petitions themselves. The petitions show that public monies are being committed to broadband networks deployed to public safety standards and managed by the officials responsible for emergency response.[12] Agencies indicate their commitment of public resources to deploy and manage these broadband networks. And new instances of public investment continue to emerge, particularly in metropolitan areas facing high threat assessment levels, to provide funding for local and regional broadband advanced services using the 700 MHz band. These state and local governments know

[9] *See Northrop Grumman 9th NPRM Comments* at 8.
[10] *Id*. at 9.
[11] *Id*.
[12] *Waiver Petition* of the City of Charlotte, North Carolina at 5 (August 4, 2009).

that the networks will bring tangible improvement to expediting and improving help to the citizen facing an emergency, and they are moving forward to stand them up.

III. THE COMMISSION'S PUBLIC NOTICE

The Commission's *Public Notice* inquires how the waiver petitions can be addressed while preserving the objective of a nationwide broadband network with connectivity across jurisdictions and agencies.[13] The Public Notice also seeks comment, among other things, on what information should the applicants present to demonstrate a credible commitment.[14] Additionally, the Commission renews its concern that the 700 MHz band not evolve to a series of "'balkanized networks incapable of even minimum interoperability'" between and among each other.[15]

Through these inquiries, the Commission has taken the vital step to bring public safety broadband to reality. The petitions show with clarity the path to nationwide interoperability and connectivity. Each shows that the needs of local agencies can be fulfilled, and that officials accountable for emergency response will also be responsible for the communications network upon which such services rely. Granting the petitions and their underlying applications will serve as an important underpinning of the path to pervasive availability of mission-critical broadband for public safety.

To ensure nationwide interoperability and connectivity, core obligations should be established, and each licensee must be capable of interoperability/connectivity with adjacent 700 MHz public safety broadband networks, current or future. The Commission should recognize that interoperability is being achieved through the commercial broadband wireless and network

[13] *Public Notice* at Appendix A.
[14] *Id*.
[15] *Id, citing Third Further Notice* at 14321.

open standards, and by the enormous inherent flexibility of IP-based networks. These include the future possibility of widespread implementation of IP Multimedia Subsystem (IMS) protocols.[16] The robust adaptability of the latest broadband wireless user equipment, with software-defined characteristics and multi-mode capabilities, can provide imbedded interoperability for the physical radiofrequency layer.[17]

As an evolving technology, Long Term Evolution (LTE) exemplifies an environment where connectivity and interoperability are assumed. The National Public Safety Telecommunications Council's important work documents the minimum requirements necessary to enable roaming between LTE networks built by multiple, independent public safety organizations and commercial service providers. Its compilation and analysis was based on scenarios where roaming users will have initial access to the Internet and additional applications/services as defined by agency operations.[18]

There may be a role for the Commission, with the assistance of the PSBL, in fashioning competitively neutral interoperability standards if necessary or useful to achieve network-level authentication or other specific elements of interoperability. Yet, an objective of total top-to-bottom nationwide homogeneousness, which could only emerge after lengthy deliberations where compromise pervades, will deter innovation and delay advanced services to agencies now ready to invest and deploy advance service networks. Neither any D Block Licensee nor the

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[16] *See Northrop Grumman 3rd FNPRM Comments* at 7; *Northrop Grumman 2nd FNPRM Comments* at 11; *Northrop Grumman 2nd FNPRM Reply Comments* at 3-4; *Reply Comments of Northern Grumman Information Technology, Inc.*, WT Docket No. 06-150 *et al.* (filed June 4, 2007) ("*Northrop Grumman 1st FNPRM Reply Comments*") at 8; *Northrop Grumman 9th NPRM Comments* at 9-10.

[17] *See Northrop Grumman 2nd FNPRM Reply Comments* at 4; *Northrop Grumman 1st FNPRM Reply Comments* at 8; *Northrop Grumman 9th NPRM Comments* at 9-10.

[18] National Public Safety Telecommunications Council (NPSTC) 700 MHz Broadband Network Requirements Task Force, Technical Working Group, *700 MHz LTE Network Interoperability*, http://www.npstc.org/documents/700_MHz_BBTF_Final_Report_0090904_v1_1.pdf (Appendix F, p. 48 *et seq*).

PSBL should have decision making authority to determine how a network meets the requirements as long as they are consistent with the PBSL guidance. An important role for the PSBL will be to coordinate, assist and expedite connectivity between and among networks, but it should not dictate or adjudicate particulars of network design and operation. Such would undermine competitive forces, cause delay and cloud responsibility and accountability. As Northrop Grumman has previously commented, "[a] public/private shared network – or any network infrastructure serving public safety entities – can be expected to meet local mission-critical needs best when the determination of build-out particulars is made closest to home."[19]

Northrop Grumman suggests the establishment of a nationwide clearinghouse for 700 MHz interoperability to provide a managed service platform allowing users to roam throughout the systems and access "home base" information in a secure and regulated fashion. Such a clearinghouse also could provide common services such as location-based services and network security (including cyber security monitoring). The Commission and PSBL should seek funding to allow for immediate organization of this common infrastructure bringing together the various regional networks that will be built by the waiver holders, a place to define and implement proper interoperability between regional networks from the beginning. The PSST may be well suited to create and operate this centralized framework, as part of its role as the PSBL and in a role of establishing and administering the fabric of public safety interoperability between these networks and within any national network.

On the issues of demonstrating capability to deploy and requirements for build-out, Northrop Grumman urges that waivers be granted and applicants authorized upon a firm commitment to deploy within a reasonable time period. Applicants should describe the breadth

[19] *Northrop Grumman 3rd FNPRM Comments* at 3.

of the proposed network, when deployment will commence and the project milestones. Significant additional requirements should not be imposed, substantive or procedural, as such will only delay deployment. The Commission should rely on the clarity of its rules and its enforcement authority, and be guided by the fundamental premise that in these instances, state and local public officials are using the spectrum as it intended all along, as a resource to assist a core function of government -- emergency response.

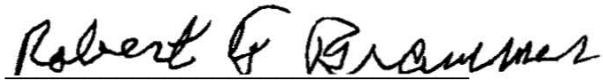
IV. CONCLUSION

The pending petitions for waiver submitted by state and local governments to use the 700 MHz band to deploy broadband networks presents the Commission with the real near-term opportunity to bring advanced services to public safety. Granting the petitions will preserve and promote the goal of nationwide interoperability and connectivity, while moving forward where possible with mission-critical broadband networks and applications ready to make a meaningful improvement the speed and quality of emergency response. The alternative of continued policy deliberations and delay would ignore the evolving market forces driving these thirteen opportunities for incremental progress, and others as they no doubt emerge. Northrop Grumman

urges the Commission to move expeditiously and approve the waivers requested by the state and local governments.

Respectfully submitted,

NORTHROP GRUMMAN INFORMATION TECHNOLOGY, INC.



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